

## Claims

1. Silanised, structurally modified silicas, characterised by vinyl groups or vinyl silyl groups fixed to the surface, hydrophobic groups such as trimethyl silyl and/or dimethyl silyl and/or monomethyl silyl additionally being fixed to the surface, having the following physico-chemical properties:
- 5
- |                  |                    |                           |
|------------------|--------------------|---------------------------|
| BET surface area | m <sup>2</sup> /g: | 25 - 400                  |
| Average primary  |                    |                           |
| particle size    | nm:                | 5 - 50                    |
| pH:              |                    | 3-10                      |
| Carbon content   | %:                 | 0.1-10                    |
| DBP value        | %:                 | < 200 or not determinable |
- 10
- 15 2. Process for producing the silanised, structurally modified silicas according to claim 1, characterised in that silicas are treated with a surface-modifying agent, the mixture obtained is heat treated and then structurally
- 20 modified.
3. Process for producing the silanised, structurally modified silicas according to claim 2, characterised in that the silicas are sprayed first with water and then with
- 25 the surface-modifying agent, optionally mixed further, then heat treated and then structurally modified.
4. Process for producing the silanised, structurally modified silica according to claim 2, characterised in that
- 30 the silica is treated with the surface-modifying agent in vapour form, the mixture is heat treated and then structurally modified.

5. Process for producing the silanised, structurally modified silica according to claim 3, characterised in that the structurally modified silica is post-ground and/or conditioned.
- 5 6. Process for producing the silanised, structurally modified silica according to claim 4, characterised in that the structurally modified silica is post-ground and/or conditioned.
- 10 7. Use of the silanised, structurally modified silica according to claim 1 as a filler in silicone rubber.